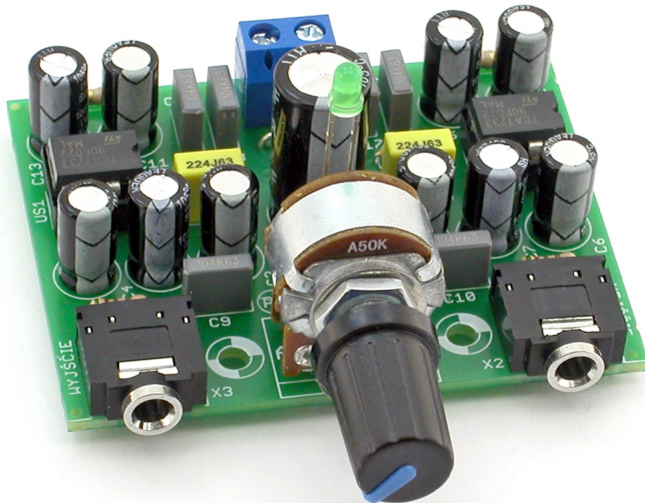


AVT 1024

Headphone amplifier



Stereo power amplifier with integrated circuits TDA7233. The load of the amplifier can be headphones with impedance greater than 2Ω . The best results are achieved with headphones with an impedance of 32Ω .

Specifications

- AB class power amplifier
- Output power 800mW at $R_L=32\Omega$ and $V_{cc}=12V$
- THD is less than 0.3%
- Bandwidth 17Hz-23kHz
- Supply voltage 3-15V DC
- Power consumption in the standby mode approx 6mA / channel

Functional description

Schematic diagram of the amplifier is shown in Figure 1. Both channels are identical and each contains integrated circuit TDA7233. The C9 and C10 capacitors form a loop of negative feedback for alternating current. The inclusion of $5,1\Omega$ resistors in series with these capacitors causes a decrease in the voltage gain of the power stage, which reduces the nonlinear

distortion and harmonic frequency level in the output signal. The audio output signal is fed through capacitors C4 and C8 to the output connector to which the headphones are connected directly. They can be any magnetodynamic headphones with an impedance greater than 2Ω .





The assembly is typical and should not cause the problems. It runs in standard way starting from the smallest components and ending with the largest ones. During assembly the polarity of the components (electrolytic capacitors, transistors, diodes) should be noted.

After completing the assembly, the polarization of the components on the PCB and the short circuiting of the soldering points should be carefully checked. Correct assembly ensures immediate and trouble-free commissioning of the amplifier.



Component list

Resistors:

- R1, R3:10k Ω (brown-black-orange-gold)
- R2, R4:5,1 Ω (green-brown-red-gold)
- R5, R6:1,2 Ω (brown-red-red-gold)
- R7:1k Ω (brown-black-red-gold)
- Z:0 Ω (black)
- PR1:rotary potentiometer 2 $\times$ 50k Ω

Capacitors:

- C1, C5:220nF (marked as 224)
- C2, C4, C6:100 μ F !
- C3, C7:22 μ F !
- C8, C11, C14:100 μ F !
- C9, C10, C12:100nF (marked as 104)
- C13, C16:10 μ F !
- C15, C17, C18:100nF (marked as 104)
- C19:1000 μ F !

Semiconductors:

- D1:1N4007 !
- LD1:LED diode !
- US1, US2:TDA7233 with 8-pin IC socket !

Others:

- X2, X3:3.5mm Stereo Audio Jack
- X1:2-pin terminal block connector

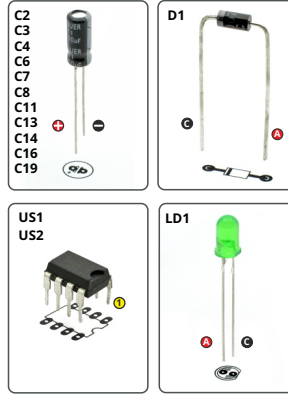


While assembling the components marked with an exclamation mark attention should be paid to their polarity. Symbols of the components on the PCB as well as photos of assembled sets may come in useful. To access high-resolution images, download the PDF file.

<http://bit.ly/2I3o0fK>



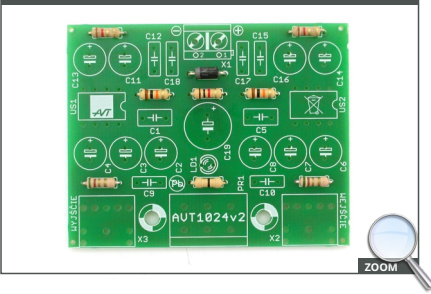
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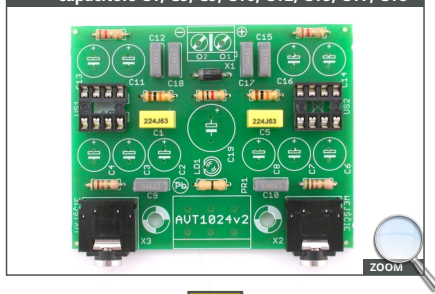
Start off by soldering the printed circuit elements in order from smallest to largest. The unit assembled flawlessly, using the supplied components will operate immediately after switching on the power supply.

Assembly in 4 steps

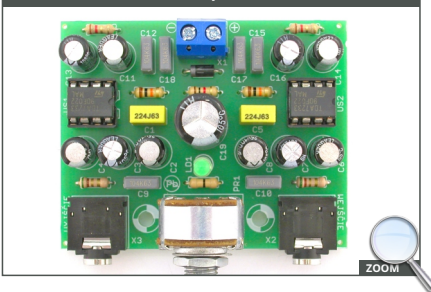
1 Solder resistors R1-R7, Z and diode D1



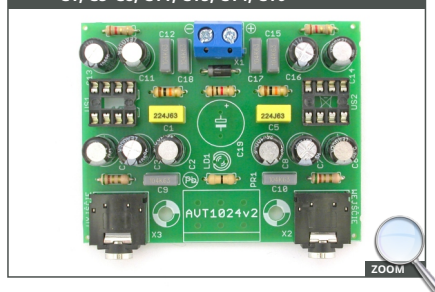
2 Solder IC sockets, audio jack connectors and capacitors C1, C5, C9, C10, C12, C15, C17, C18



4 Solder capacitor C19, potentiometer PR1, LED diode, insert chips into socket



3 Solder terminal block connector, and capacitors C1, C3-C8, C11, C13, C14, C16



AVT 1024

Headphone amplifier

DIFFICULTY
LEVEL











This symbol means do not dispose of your product with your other household waste. Instead, you should protect human health and the environment by handing over your waste equipment to a designated collection point for the recycling of waste electrical and electronic equipment.

AVT SPV reserves the right to make changes without prior notice.

AV1-SPV reserves the right to make changes without prior notice.

Assembly and connection of the device not in accordance with the instructions, unauthorized modification of components and any structural modifications may cause damage to the device and endanger the person using it. In this case, the manufacturer and its authorized representatives shall not be liable for any damages arising directly or indirectly from the use or malfunction of the product.